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PATENT
YR0-61

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: Robert A. Wiedeman et al	: Date: October 11, 2004
Serial No. 09/751,765	: Group Art Unit: 2681
Filed: December 29, 2000	: Examiner: Sheila B. Smith
For: Method and Apparatus Providing Suppression of System Access By Use of Confidence Polygons, Volumes and Surfaces in a Mobile Satellite System	:

APPEAL BRIEF TRANSMITTAL LETTER

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Enclosed is an Appeal Brief, in triplicate, for the above patent application.

___ Applicant petitions for an extension of time for month(s). If an additional extension of time is required, please consider this a petition therefor.
Fee:

___ An extension for month(s) has already been secured; the fee paid therefore is deducted from the total fee due for the total months of extension now requested.
Extension fee due with this request:

_X_ Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

___ The Appeal Brief Fee was paid in a prior appeal in which there was no decision on the merits by the Board of Appeals.

_X_ The Appeal Brief Fee is enclosed herewith. Fee: $330.00

_X_ The total fee due is $330.00

_X_ Address all correspondence to Joyce Kosinski, Karambelas & Associates, 655 Deep Valley Drive, Suite 303, Rolling Hills Estates, CA 90274.

This letter is submitted in triplicate.

Respectfully submitted,

AW Karambelas

Anthony W. Karambelas
Reg. No. 25,657

Karambelas & Associates
655 Deep Valley Drive, Suite 303
Rolling Hills Estates, CA 90274
Telephone: (310) 265-9565
Facsimile: (310) 265-9545

PATENT
Docket No. YR0-61

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Robert A. Wiedeman et al
SERIAL NUMBER:	09/751,765
FILING DATE:	December 29, 2000
FOR:	Method and Apparatus Providing Suppression of System Access By Use of Confidence Polygons, Volumes and Surfaces in a Mobile Satellite System
GROUP ART UNIT:	2681
EXAMINER:	Sheila B. Smith

CERTIFICATE OF MAILING
UNDER 37 CFR 1.8

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Identification of Transmitted Papers

Appeal Brief in triplicate, Appeal Brief Transmittal Letter in triplicate, Check in the Amount of $330.00, return receipt postcard

I hereby certify that the above-identified correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on **October 11, 2004**.

Joyce E. Kosinski

Joyce E. Kosinski
Depositor

Karambelas & Associates
655 Deep Valley Drive, Suite 303
Rolling Hills Estates, CA 90274
Telephone: (310) 265-9565
Facsimile: (310) 265-9545

PATENT
YR0-61

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS

Appeal No.______________________

In re Application of: ROBERT A. WIEDEMAN ET AL
Serial No.: 09/751,765
Filed: December 29, 2000
For: METHOD AND APPARATUS PROVIDING SUPPRESSION OF SYSTEM ACCESS BY USE OF CONFIDENCE POLYGONS, VOLUMES AND SURFACES IN A MOBILE SATELLITE SYSTEM

APPELLANTS' BRIEF ON APPEAL

Anthony W. Karambelas
655 Deep Valley Drive, Suite 303
Karambelas & Associates
Rolling Hills Estates, CA 90274

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS

In re Application of: ROBERT A. WIEDEMAN ET AL	: Date: October 11, 2004
Serial No.: 09/751,765	: Group Art Unit: 2681
Filed: December 29, 2000	: Examiner: Sheila B. Smith
For: METHOD AND APPARATUS PROVIDING SUPPRESSION OF SYSTEM ACCESS BY USE OF CONFIDENCE POLYGONS, VOLUMES AND SURFACES IN A MOBILE SATELLITE SYSTEM	:

APPELLANTS' BRIEF ON APPEAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is taken from the decision of the Examiner in the Office Action dated April 2, 2004 finally rejecting Claims 1-25 in Paper No. 8 of the above-identified patent application. This brief is submitted in accordance with the provisions of 37 C.F.R. §1.192.

REAL PARTY IN INTEREST

The real party in interest is Globalstar L.P. which acquired rights to the present application by way of an assignment from the inventors.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to appellants, appellants' legal representative, or the assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1-26 are currently pending in this application; claims 1-25 were finally rejected in the Office Action dated April 2, 2004; claim 26 was allowed in the Office Action dated April 2, 2004. Appellants appeal from this final rejection of claims 1-25.

STATUS OF AMENDMENTS

With regard to the status of amendments, two Office Actions were issued during prosecution of this application. No claims were amended in response to the first Office Action dated October 14, 2003. No claims were amended in response to the final Office Action dated April 2, 2004. The claims as they currently stand are presented in the Appendix.

SUMMARY OF INVENTION

In the specification on page 3, line 28 through page 5, line 30 the following Summary of the Invention is presented: The foregoing and other problems are overcome and the foregoing objects and advantages are realized by methods and apparatus in accordance with embodiments of this invention.

These teachings can be employed to control the actions of a user terminal (UT) located at a remote location, possibly far from a gateway (GW), which has an interface to the Public Switched Telephone Network (PSTN) and/or to the Internet or to any other kind of network, either mobile or fixed. These teachings employ a computer generated and stored database of an area (referred to as a Confidence Polygon), a volume (referred to as a Confidence Volume), and/or a plane (referred to as a Confidence Surface) to establish a geometric shape located on the earth, above the earth or in space, or combinations thereof. In addition, there is assigned to these areas, volumes and/or planes a static or a variable value referred to as a Confidence Limit (CL) that can be compared to a value of an error (E) in a position location of the UT. The error signal can either be generated by the UT or by the GW. A controller, preferably a part of the GW, acts upon the database of the geometric shapes, and the assigned or derived values of CL and E, to determine if the comparison of CL and E, combined with the current position of the UT, yields a certain result according to the operational mode of the GW controller. There can be many operational modes of the controller. Depending on the operational mode the result of the comparison of the CL assigned to the area, volume or plane is used to affect control of the UT or an external device attached to the UT. By example, the UT may be forbidden or allowed to access the system or to make or receive a call, or some operational characteristic(s) of the UT may be specified, such as transmitter power, frequency, and the like. The end result, by example, is an ability to provide protection for a site, such as a radio astronomy site, from UT emissions.

Also disclosed is a method for operating a mobile satellite communication system having at least one GW, at least one user terminal UT, and a constellation of satellites. The method includes steps of, for a site to be protected, for example, from

UT transmissions, specifying an exclusion or inclusion zone having a confidence limit (CL) associated therewith; and selectively providing service to a UT depending on a determined location of the UT relative to the exclusion or inclusion zone and on an estimated error (E) of the determined UT location. The exclusion or inclusion zone is specified to be at least one of a polygon that defines an area, a volume, or a surface. The location of the UT can be determined by the UT by its own internal calculations, or by using an external source such as GPS, and transmitted to the GW, or the location of the UT can be determined by the UT in cooperation with the GW, or the location of the UT is determined by the GW. The UT is granted service or denied service if the value of E is less than CL, and the GW may set the value of CL to be less than a possible minimum value of E for excluding all UTs from operating within the exclusion zone, or it may set the value of CL to be greater than a possible maximum value of E for enabling all UTs to operate within the exclusion zone. Overlapping exclusion zones may be specified, each having a different value of CL, and exclusion zones may be shared by two or more GWs. Boundaries of the exclusion zone can be fixed and static, or they may be dynamic and capable of movement, with variability being a function of, for example, time, or a location of the UT or the GW, or a location of the site to be protected. The exclusion zone may be temporary and established and removed as a function of time, and the values of at least one of CL and E may vary as a function of time. At least one of the location or shape of the exclusion or inclusion zone may vary as a function of a location of the UT, or as a function of a location of the GW. The exclusion or inclusion zone may be combinations of Confidence Polygons, Confidence Volumes or Confidence Surfaces. The value of E may be a function of the accuracy of the UT local oscillator, and information that specifies the accuracy of the UT local oscillator can be stored or determined by the UT and sent to the GW, and/or stored in the GW, and/or stored in a home GW of the UT, and transferred from the home GW to a serving GW when the UT is roaming. In addition the value of E for the user terminal may be supplied over a network from a home (HLR) or other location register.

The operation of this invention can be used as a switch, to cause a certain activity by either the user terminal or the gateway, which is based on the location of the user terminal within a service area.

ISSUES

The issues in this appeal are:

Whether claims 1-12 and 19-25 are unpatentable under 35 U.S.C. 103(a) over Zhao et al in view of Maeda et al;

Whether claims 13-18 are unpatentable under 35 U.S.C. 103(a) over Zhao et al in view of Maeda et al and further in view of Ishikawa et al.

GROUPING OF CLAIMS

With regard to the specific grounds of rejection that are in issue, it is respectfully submitted that Claims 1-25 stand or fall together.

DESCRIPTION OF REFERENCES

In U. S. 6,332,069 to Zhao et al, filed February 10, 1999, issued December 18, 2001, there is disclosed an apparatus and method, for use in a satellite-based communications network, for minimizing blocking of communication between the network and access terminals resulting from differences in the signal propagation delays for the access terminals due to their different locations within a coverage area serviced by a spot beam generated by a satellite in the network. The apparatus includes a spot beam segregator which segregates a coverage area of the spot beam into at least one coverage zone based on the maximum and minimum propagation delay experienced by access terminals within the coverage area of the spot beam. The apparatus further includes a carrier grouper which groups the carrier into a number of groups corresponding to the number of offset zones, and assigns each carrier group to a respective one of the coverage zones. The number of carriers assigned to each carrier group is proportional to the estimated number of access terminals located in the respective coverage zone to which the carrier group is assigned. The apparatus assigns a respective burst offset to each respective coverage zone so that signals being transmitted by the satellite and access terminals within the coverage zone are transmitted in accordance with the same burst offset. Accordingly, burst signals are arranged efficiently in the TDMA time frames being transmitted over the carriers between the satellite and access terminals, which therefore minimizes call blocking.

In U. S. 6,352,222 to Maeda et al, filed May 20, 1998, issued March 5, 2002, there is disclosed a method to establish the communication lines among the movable bodies and/or fixed stations and to configure communication system with a small number of satellites, employing a method which has the steps of determining six orbit-related parameters using input conditions including a geographical condition of the service area, a desired service time and the tolerance of an ascending vertical angle within which the satellite can be viewed from the service area, and establishing the satellite communication with one or more satellites, an individual satellite being arranged on the orbits selected and combined among plural elliptical orbits

corresponding to the determined six orbit-related parameters on which the satellites stay for a sufficiently long time that they may come successfully into sight in the zenith direction.

In U. S. 5,969,669 to Ishikawa et al, filed December 4, 1995, issued October 19, 1999, there is disclosed a method for uniquely determining the position of a mobile earth station in a mobile satellite communication system which employs a non-geostationary satellite with a multi-spot beams. A given point of a preknown position on the earth surface is defined as the center coordinate of a three-dimensional coordinate axis, information on the measured distance and Doppler shift amount between a mobile earth station of an unknown position and a non-geostationary satellite is used to repeat the estimation of the position of the mobile earth station a plurality of times, thereby obtaining the position of the earth station with high accuracy. Furthermore, by observing the estimated positions of the mobile earth station obtained as a plurality of solutions at proper time intervals, comparing with one another the movements of the respective estimated positions occurring with the local time proceeds and selecting the estimated position of the minimum movement, the estimated position of the mobile earth station is uniquely determined relative to its true position.

ARGUMENT

The Examiner has rejected claims 1-12 and 19-25 under 35 U.S.C. 103(a) as being unpatentable over Zhao et al U. S. Patent 6,332,069 in view of Maeda et al U. S. Patent 6,352,222.

The Examiner states regarding claim 1 Zhao et al discloses essentially all the claimed invention as set forth in the instant application, further Zhao et al discloses an apparatus and method for grouping carriers to minimize the occurrence of call blocking in a satellite-based communications network. In addition, the Examiner states, Zhao et al discloses a method for operating a mobile satellite communication system having at least one gateway (124), at least one user terminal (134), comprising steps of: for a site to be protected from UT transmissions, specifying an exclusion zone having a confidence limit (which reads on service a particular zone of coverage of the spot beam so that signal burst can be transmitted more efficiently over the carriers between the satellite and access terminals, as disclosed in col. 4, lines 40-45) associated therewith; and selectively providing service to a (134) depending on a determined location of the UT relative to the exclusion zone (which reads on this spot beam coverage area is segregated into three offset zones, as disclosed in col. 15, lines 13-17) and on an estimated error (E) of the determined UT location (which reads on with

15 degree beam elevation angle, 5.3 degree satellite inclination angle and 50% beam coverage extension (due to beam pointing error and mobile terminal beam selection error), as disclosed in col. 15, lines 9-11). However, the Examiner submits, Zhao et al fails to specifically disclose the use of a constellation of satellites.

The Examiner reasons, however, in the same field of endeavor Maeda et al disclose satellite, satellite control method and satellite communication system. In addition, according to the Examiner, Maeda et al discloses the use of a constellation of satellites as exhibited in Fig. 12 disclosed in col. 18, lines 31-53.

Therefore, the Examiner concludes it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Zhao et al by modifying a position location system with a constellation of satellites as taught by Maeda et al for the purpose of controlling the trajectory by using the parameters.

Appellants respectfully submit that in Zhao et al U.S. 6,332,069 there is a disclosed an apparatus and method for use in a satellite-based communication network for minimizing blocking of communication between the network and access terminals resulting from differences in the signal propagation delays for the access terminals due to their different locations within a coverage area serviced by a spot beam generated by a satellite in the network. The apparatus includes a spot beam segregator which segregates a coverage area of the spot beam into at least one coverage zone based on the maximum and minimum propagation delay experienced by access terminals within the coverage area of the spot beam. The apparatus further includes a carrier grouper which groups the carrier into a number of groups corresponding to the number of offset zones, and assigns each carrier group to a respective one of the coverage zones. The number of carriers assigned to each carrier group is proportional to the estimated number of access terminals located in the respective coverage zone to which the carrier group is assigned. The apparatus assigns a respective burst offset to each respective coverage zone so that signals being transmitted by the satellite and access terminals within the coverage zone are transmitted in accordance with the same burst offset. Accordingly, burst signals are arranged efficiently in the TDMA time frames being transmitted over the carriers between the satellite and access terminals, which therefore minimizes call blocking.

Appellants respectfully submit that in Maeda et al 6,352,222 there is disclosed "In order to establish the communication lines among the movable bodies and/or fixed stations and to configure communication system with a small number of satellites, present method has the steps of determining six orbit-related parameters by using input conditions including a geographical condition of the service area, a desired service time and the tolerance of an ascending vertical angle within which the satellite

"can be viewed from the service area, and establishing the satellite communication with one or more satellites, an individual satellite being arranged on the orbits selected and combined among plural elliptical orbits corresponding to the determined six orbit-related parameters on which the satellites stay for a sufficiently long time that they may come successfully into sight in the zenith direction."

Appellants respectfully submit that in Zhao et al col. 4, lines 40-45 there is disclosed "apparatus and method, for use in a satellite-based communications system, for minimizing call blocking in the network by grouping the carriers available to a spot beam into an appropriate number of groups which each service a particular zone of coverage of the spot beam, so that signal burst can be transmitted more efficiently over the carriers between the satellite and access terminals." Appellants respectfully contend that nowhere does this suggest, imply or disclose specifying an exclusion zone for a site to be protected from user terminal transmissions having a confidence limit (CL) associated therewith as required in the first element of claim 1. Further, in col. 15, lines 13-17 there is disclosed "Therefore, in accordance with the above equations, this spot beam coverage area is segregated into three offset zones. Hence, the traffic resource pool of carriers is divided into 3 carrier groups." This coupled with the recitation by the Examiner of col. 15, lines 9-11 where it is stated "inclination angle and 50% beam coverage extension (due to beam pointing error and mobile terminal beam selection error)" does little if nothing to cure the above recited deficiency as stated above and does not disclose, suggest or imply providing service to a user terminal depending on a determined location of the user terminal relative to the exclusion zone on an estimated error (E) of the determined user terminal as required by the second element of claim 1.

Appellants respectfully disagree that Maeda et al is in the same field of endeavor as contended by the Examiner and further that in Fig. 12 and col. 18, lines 31-53 there is a disclosed an orbit arrangement in four orbit planes, including satellite 120a, 120b, 120c and 120d which are all arranged on separate orbits, respectively. These satellites have specified orbit, cycles, eccentricities, orbital inclinations and a specified perigee of 270 degrees. It is stated that their apogees may be located at a desired position above the Japanese territory and thus there is generally disclosed in this ongoing discussion an example of an orbit arrangement directed to services covering the whole Japanese territory. In addition to not curing the deficiency of the Zhao et al reference as recited above, Maeda et al is not seen to be in the same field of endeavor, having only satellite structures in common with the satellite recited in Zhao et al. Further, it is respectfully contended by Appellants that Maeda et al is not properly combinable with Zhao et al as proposed by the Examiner since nowhere in

either of Zhao et al or Maeda et al is there any teaching, suggestion or motivation found in either the references themselves or in the knowledge generally available to one of ordinary skill in the art to do so. See In re Fine, 837 F.2d 1071 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). It is noted by Appellants that the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where the above recited bases are present but Appellants respectfully contend none of these bases are present in this record to support the combination of these references as urged by the Examiner.

The Examiner goes on to say regarding claims 2, 6, 8 and 9 that Zhao et al teaches everything claimed as applied above and directs Appellants to claim 1, however Zhao et al fails to specifically disclose the use of the exclusion zone specified to comprise at least one of a polygon that defines an area, a volume, or a surface. The Examiner goes on to state, in the same field of endeavor, Maeda et al discloses a satellite, satellite control method and satellite communication system. In addition, the Examiner contends, Maeda et al discloses the use of the exclusion zone which is specified to comprise at least one of a polygon that defines an area, a volume, or a surface (which reads on this as to form such as polygon that includes all the service areas, as disclosed in col. 10, lines 37-39).

Appellants respectfully submit that in Maeda et al col. 10, lines 37-39 there is disclosed "defined so as to form such a polygon that includes all the service areas. This polygon can be formed by plural adjoining triangles."

Appellants respectfully contend that the defined areas as set out in col. 10, lines 37-39 have no relationship to the exclusion zone as defined in claims 2, 6, 8 and 9 which are disclosed to be a polygon having various characteristics as in 2, 6 and 8 and the exclusion zone specified to comprise a volume defined by connected points on the surface of the earth and at least point located above the surface of the earth as set out in claim 9. Appellants again respectfully submit that claims 2, 6, 8 and 9, depending from claim 1, are patentably distinguishable over Zhao et al and Maeda et al for the reasons recited above with regard to claim 1. Therefore, Appellants cannot agree it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Zhao et al by modifying the position location system with the exclusion zone as specified to comprise at least one of a polygon that defines an area, a volume or a surface as taught by Maeda et al for the purpose of setting the initial value for the orbital inclination angle.

The Examiner goes on to state regarding claims 3-5 Zhao et al discloses everything claimed as applied above (referring Appellants to claim 1), in addition Zhao

et al discloses a location of the UT (134) as determined by the UT (134), and transmitted to the GW (124) as disclosed in col. 8, lines 55-65.

Appellants respectfully submit that in Zhao et al col. 8, lines 55-65 there is disclosed "The process of segregating the coverage area 164 and allocating the carriers accordingly is carried out by a computer in a traffic control subsystem (TCS) in the gateway station assigned to the access terminal 134 placing the call. For example, if an access terminal 134 is at a location assigned to the primary gateway station site 104, the processing is performed by a computer in the TCS in gateway station 112. However, if an access terminal 134 is at a location assigned to national gateway station site 122, the processing is performed by a computer in the TCS in gateway station 124." Appellants respectfully submit that they are at a loss to understand how segregating the coverage area and allocating the carriers accordingly as defined in col. 8, lines 55-65 in any way teaches, suggests or implies determining the UT location by the UT and transmitting it to the GW as in claim 3, determining the UT location by the UT in cooperation with the GW as in claim 4 and determining the UT by the GW as in claim 5. Further, Appellants respectfully submit that claims 3-5 are distinguishable over the combination of Zhao et al and Maeda et al for the reasons cited above with regard to claim 1.

The Examiner states regarding claim 7 that Zhao et al discloses everything claimed as applied above and directs Appellants' attention to claim 1, in addition Zhao et al discloses the UT (134) is granted service if the value of E is less than CL as disclosed in col. 1, lines 27-36.

Appellants respectfully submit that in Zhao et al at col. 1, lines 27-36 as cited by the Examiner there is disclosed "More particularly, the present invention relates to an apparatus and method for minimizing such communication blocking by segregating the coverage area of the spot beam into at least one coverage zone, segregating the "communication carriers available for the spot beam into a number of carrier groups corresponding to the number of coverage zones, and assigning to each carrier group a specific burst offset time period in accordance with which communication bursts are transmitted over carriers in the carrier group between the network and access terminals located within the coverage zone serviced by the carrier group." Appellants respectfully contend that nowhere in said recitation is there found the method allowing the UT to be granted surface service if the value of E is less than CL. The recited passage as stated relates to minimizing communication blocking by segregating the coverage zone incorporating a method completely distinguishable from that of the instant claim.

The Examiner goes on to state regarding claim 10 Zhao et al discloses everything claimed as applied above and refers Appellants to claim 1, in addition Zhao et al discloses the exclusion zone is specified to comprise a surface defined by at least two connected points on the surface of the earth and at least a point located above the surface of the earth as disclosed in col. 1, lines 27-36.

Appellants again respectfully contend that nowhere in col. 1, lines 27-36 is an exclusion zone specified to comprise a surface defined by at least two connected points on the surface of the earth and at least a point located above the surface of the earth as contended by the Examiner. Further, Appellants respectfully submit that claim 10 is patentably distinguishable over Zhao et al and Maeda et al for the reasons cited above with regard to claim 1.

The Examiner goes on to state regarding claims 11-12 Zhao et al discloses everything claimed as applied above and directs Appellants' attention to claim 1, in addition Zhao et al discloses boundaries of the exclusion zone are static as disclosed in col. 1, lines 27-36. Again, Appellants respectfully submit that nowhere in col. 1, lines 17-36 is there disclosed, suggested or implied that the boundaries of the exclusion zone are static as required in the instant claims. Further, claims 11-12 are distinguishable over Zhao et al and Maeda et al for the reasons cited above with regard to claim 1.

The Examiner goes on to state regarding claims 19-25 Zhao et al discloses everything claimed as applied above and directs Appellants' attention to claim 1, in addition Zhao et al discloses wherein there are overlapping exclusion zones specified, each having a different value of CL as disclosed in col. 1, lines 27-36. Again, Appellants respectfully submit that nowhere in col. 1, lines 27-36 of Zhao et al is there disclosed overlapping exclusion zones, each having a different value of CL as required by the instant claims. Further, claims 19-25 are distinguishable over Zhao et al and Maeda et al for the reasons cited above with regard to claim 1.

The Examiner has rejected claims 13-18 under 35 U.S.C. 103(a) as being unpatentable over Zhao et al in view of Maeda et al and further in view of Ishikawa et al U. S. Patent No. 5,969,669.

The Examiner states regarding claims 13-18 Zhao et al in view of Maeda et al discloses everything claimed as applied above and directs Appellants' attention to claim 1, however, Zhao et al in view of Maeda et al fails to specifically disclose the use of the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the UT.

The Examiner further contends that Ishikawa et al is in the same field of endeavor and discloses a method for determining position of mobile earth station in

satellite communication system. In addition, the Examiner contends, Ishikawa et al discloses the use of the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the GW (which reads on t is possible to perform high accuracy position determination by estimating and compensating for the timing error arising from instability in the accuracy of the clock of the mobile earth station and the frequency error resulting from instability of the frequency oscillator of the mobile earth station, as disclosed in col. 6, lines 10-20).

Appellants respectfully submit that in Ishikawa et al there is disclosed a method for uniquely determining the position of a mobile earth station in a mobile satellite communication system which employs a non-geostationary satellite with a multi-spot beam. A given point of a preknown position on the earth surface is defined as the center coordinate of a three-dimensional coordinate axis, information on the measured distance and Doppler shift amount between a mobile earth station of an unknown position and a non-geostationary satellite is used to repeat the estimation of the position of the mobile earth station a plurality of times, thereby obtaining the position of the earth station with high accuracy. Furthermore, by observing the estimated positions of the mobile earth station obtained as a plurality of solutions at proper time intervals, comparing with one another the movements of the respective estimated positions occurring with the local time proceeds and selecting the estimated position of the minimum movement, the estimated position of the mobile earth station is uniquely determined relative to its true position.

In Ishikawa et al col. 6, lines 10-20 it is stated by using the information about measured distances and Doppler shift amounts between the mobile earth station and the non-geostationary satellite, which are measured at different local times, errors in time which are attributable to instability in the position of the mobile earth station and in the accuracy of the clock mounted in the mobile earth station and errors in frequency which result from instability of the frequency oscillator mounted in each mobile earth station can be estimated at the same time. By removing the factors responsible for these errors, it is possible to achieve high accuracy position determination of the mobile earth station.

Appellants respectfully contend that nowhere in this recitation in Ishikawa et al is there disclosed (1) that value E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in the UT as in claim 13, (2) the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in the GW as required in claim 14, (3) the value of E is a function of the

accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in a home GW of the UT and is transferred from the home GW to a serving GW when the UT is roaming as in claim 15, (4) where the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in or is determined by the UT and is transferred to the GW as required in claim 16, (5) where the UT is granted service if the value of E is less than CL and where the GW sets the value of CL to be less than a possible minimum value of E for excluding at UTs from operating within the exclusion zone as required by claim 17, and (6) where service is granted if the value of E is less than CL and where the GW sets the value of CL to be greater than a possible maximum value of E for enabling all UTs to operate within the exclusion zone as required by claim 18. Further, Appellants respectfully submit that claims 13-18 are distinguishable over Zhao et al, Maeda et al in any combination and as further combined with Ishikawa et al in any combination for reasons stated above. Therefore, Appellants respectfully disagree that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Zhao et al by modifying the position location system with the use of the value E as a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in the UT as taught by Ishikawa et al for the purpose of determining the estimated position of the mobile earth station relative to its true position as contended by the Examiner.

Appellants respectfully submit that claims 1-25 are patentable over Zhao et al, Maeda et al, in any combination, and further in view of Ishikawa et al with regard to claims 13-18.

Accordingly, Appellants respectfully request that the final rejection of the primary Examiner be reversed and that this application be allowed to go to issue.

Respectfully submitted,

AW Karambelas

Anthony W. Karambelas
Registration No. 25,657

Karambelas & Associates
655 Deep Valley Drive, Suite 303
Rolling Hills Estates, CA 90274
Telephone: (310) 265-9565
Facsimile: (310) 265-9545

APPENDIX

Claims 1-26 as presented below are currently pending in this application.

1. A method for operating a mobile satellite communication system having at least one gateway (GW), at least one user terminal (UT), and a constellation of satellites, comprising steps of:

for a site to be protected from UT transmissions, specifying an exclusion zone having a confidence limit (CL) associated therewith; and

selectively providing service to a UT depending on a determined location of the UT relative to the exclusion zone and on an estimated error (E) of the determined UT location.

2. A method as in claim 1, wherein the exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume, or a surface.

3. A method as in claim 1, wherein location of the UT is determined by the UT, and transmitted to the GW.

4. A method as in claim 1, wherein location of the UT is determined by the UT in cooperation with the GW.

5. A method as in claim 1, wherein location of the UT is determined by the GW.

6. A method as in claim 1, wherein the exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume, or a surface, and further considers at least one of RF obstructions and terrain features.

7. A method as in claim 1, wherein the UT is granted service if the value of E is less than CL.

8. A method as in claim 1, wherein the exclusion zone is specified to comprise a polygon defined by connected points on the surface of the earth.

9. A method as in claim 1, wherein the exclusion zone is specified to comprise a volume defined by connected points on the surface of the earth and at least one point located above the surface of the earth.

10. A method as in claim 1, wherein the exclusion zone is specified to comprise a surface defined by at least two connected points on the surface of the earth and at least point located above the surface of the earth.

11. A method as in claim 1, wherein boundaries of the exclusion zone are static.

12. A method as in claim 1, wherein boundaries of the exclusion zone are dynamic and capable of at least one of movement or change in shape.

13. A method as in claim 1, wherein the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the UT.

14. A method as in claim 1, wherein the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the GW.

15. A method as in claim 1, wherein the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in a home GW of the UT, and is transferred from the home GW to a serving GW when the UT is roaming.

16. A method as in claim 1, wherein the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in or is determined by the UT and is transferred to the GW.

17. A method as in claim 1, wherein the UT is granted service if the value of E is less than CL, and where the GW sets the value of CL to be less than a possible minimum value of E for excluding all UTs from operating within the exclusion zone.

18. A method as in claim 1, wherein the UT is granted service if the value of E is less than CL, and where the GW sets the value of CL to be greater than a possible maximum value of E for enabling all UTs to operate within the exclusion zone.

19. A method as in claim 1, wherein there are overlapping exclusion zones specified, each having a different value of CL.

20. A method as in claim 1, wherein the exclusion zone is temporary and is established and removed as a function of time.

21. A method as in claim 1, wherein the values of at least one of CL and E vary as a function of time.

22. A method as in claim 1, wherein at least one of the location or shape of the exclusion zone varies as a function of a change in location of the UT.

23. A method as in claim 1, wherein at least one of the location or shape of the exclusion zone varies as a function of a change in location of the GW.

24. A method as in claim 1, wherein at least one of the location or shape of the exclusion zone varies as a function of a change in location of the protected site.

25. A method as in claim 1, wherein the exclusion zone is shared between at least two gateways.

26. A mobile satellite communication system comprising at least one gateway (GW), at least one user terminal (UT), and a constellation of satellites, said GW comprising a controller for controlling operations of said UT and further comprising an interface to at least one of the Public Switched Telephone Network (PSTN) or to the Internet, said GW storing a database containing at least one of a Confidence Polygon, a Confidence Volume, or a Confidence Surface to establish a geometric shape located on the earth, above the earth or in space, or combinations thereof, said GW further storing a static or a variable Confidence Limit (CL) value that is compared to a value of an error (E) in a position location of the UT, said controller acting upon the database and assigned or derived values of CL and E, to determine if a comparison of CL and E, combined with a current position of the UT, yields a certain result according to the operational mode of the GW controller, wherein depending on the operational

mode of the GW the result of the comparison affects control of the UT or an external device attached to the UT, whereby the UT is forbidden or allowed to access the mobile satellite system or to make or receive a call, or depending on the operational mode of the GW the result of the comparison affects some operational characteristic of the UT to provide an ability to protect a site from UT emissions.